

Approved Document B: Fire safety - frequently asked questions

Answers to frequently asked questions on Approved Document B including 2020 and 2022 amendments.

From:

[Department for Levelling Up, Housing and Communities](#) and [Health and Safety Executive](#)

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Applies to England

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These frequently asked questions (FAQs) refer to the [Fire safety: Approved Document B](#).

Requirement B1 Means of Warning and Escape

1. Paragraph 1.1 in Volume 1 of Approved Document B recommends all new dwellinghouses should be provided with smoke alarms in accordance with the BS 5839-6 to at least a Grade D2 Category LD3 standard. However, table 1 of BS 5839-6:2019 recommends Grade D1 Category LD2?

For the purposes of Part B of the Building Regulations a Grade D2 Category LD3 system is considered to be adequate. Therefore, as a minimum, the system itself should be designed and installed in accordance with the guidance for a Grade D2 LD3 systems in BS 5839-6:2019.

2. Now that door closers are no longer necessary within dwellinghouses do I need them in an HMO?

The Housing Act 2004 replaced the previous housing fitness standard with a statutory framework for assessing and tackling hazards in housing - including fire hazards. Within a house designated as a 'House in Multiple Occupation' such devices may still need to be provided between the private areas (i.e., bedrooms) and the common parts (i.e., circulation spaces, living room, kitchen etc). Further guidance on fire safety provision can be found in the Local Authorities Coordinators of Regulatory Services (LACORS) guide titled [Guidance on fire safety provisions for certain types of existing housing](#).

3. When providing a protected stairway in a dwellinghouse, do I need to fit fire doorsets on the cupboards and bathrooms?

A protected stairway should be enclosed with fire resisting construction and fire doorsets in order to protect people escaping down the stairs from a fire in the accommodation. It may not always be necessary to provide fire doorsets on cupboards if they are small and the fire risk is low. An alternative to providing a fire doorset on a bathroom is to include the bathroom within the stair enclosure, thus removing the need for a fire doorset.

4. When providing new fire doorsets in an existing dwellinghouse as part of a loft conversion, is it also necessary to replace the existing internal door frames?

Guidance on loft conversions is provided in Volume 1 of Approved Document B.

A fire doorset should be regarded as a complete installed assembly. Thus, the door, the frame and any ironmongery should be considered when assessing its suitability. In most cases, however, it should be possible to retain the existing frame. If in doubt, the test report for the door being installed will include details of the door frame in which it was tested. Fire doorsets are often thicker and much heavier than other internal doors. Where existing frames are retained, it may be necessary to replace or relocate the door stops and to install additional fixings back to the structure. The joint between the frame and the surrounding structure should be adequately fire stopped and the operating gap between the door and the frame should be kept to a minimum (usually 3-4mm).

5. For small blocks of flats with no common lobbies, are door closers required for the protected entrance halls?

Door closers are not required for internal fire doorsets in flats, when they are being used to provide lobby protection for a common stair. However, the recommendation for the provision of fire doorsets remains as does the advice to householders that doors should be kept shut, especially at night.

6. Why do we say 1 bed and not 1 person for care homes?

Paragraph 2.43 in Volume 2 of Approved Document B states; "Bedrooms should not contain more than one single or double bed". This is for a design, without sprinklers, relying upon fire resisting construction to protect occupants that are remote from the seat of fire. Research on sprinkler effectiveness in care homes has shown people who are in intimate contact with a fire, for example where clothing or bed linen is alight, are unlikely to benefit from the operation of sprinklers. However, where sprinklers are provided, people who may be in the same room but not in intimate contact with the fire (for instance in another bed) will have an increased chance of survival. It is not the intention of the Approved Document to separate couples who happen to live in a care home by insisting that they sleep in separate beds.

Requirement B3 Internal Fire Spread (Structure)

7. Diagrams 5.2a (Junction of compartment wall with roof) (Volume 1) and 8.2a (Volume 2) (Junction of compartment wall with roof) places restrictions on double skinned insulated roof sheeting, asking for the provision of a 300mm band of material of class A2 s-3, d2. Can panels with combustible thermosetting cores be used instead?

Diagrams 5.2a (Volume 1) and 8.2a (Volume 2) of Approved Document B apply a more onerous standard than Diagrams 5.2b and 8.2b, any combustible (including thermosetting) core panels

should incorporate a band of material rated A2 -s3, d2 or better 300mm wide centred over the wall.

8. Diagram 5.2b (Volume 1) and 8.2b (Volume 2) of Approved Document B (Junction of compartment wall with roof) places restrictions on double skinned insulated roof sheeting with a thermoplastic core, asking for the provision of a 300mm band of material of class A2 -s3, d2. material of limited combustibility. Can panels with combustible thermosetting cores be used instead?

In low-rise residential, office or assembly buildings to which Diagram 5.2b (Volume 1) and 8.2b (Volume 2) applies, panels with thermosetting cores can be used without a 300mm band of material A2 s-3, d2 material. However, fire-stopping must be provided to seal the joint between the compartment wall and the underside of the panel. Any voids above the panel (such as where an additional roof covering is provided) should also be adequately fire-stopped.

9. If an existing single storey shop is extended so that it exceeds the maximum 2000m² compartment size, is it necessary to install a sprinkler system?

Regulation 4 (1) of the Building Regulations 2010 states that “building work” should comply with the applicable requirements contained in Schedule 1. Regulation 4(3) then goes on to state that after the work is completed the building as a whole should comply with the applicable requirements of Schedule 1 or, where the building did not previously comply with any such requirement, is no more unsatisfactory in relation to that requirement than before the work was carried out.

Where an existing shop is extended such that the final floor area is greater than 2000m² (whether it exceeded this value previously or not) then the building as a whole may be less satisfactory in relation to Schedule 1 requirement B3(3) than before the work was carried out. Therefore, the building would have to be either subdivided to limit the compartment size, fitted with sprinklers or some other solution would be necessary in order to satisfy regulation 4(3) in relation to requirement B3. Regulation 4(3) must be judged against the requirements set out in Schedule 1 rather than the Approved Document. B3(3) requires sub-division of the building “to an extent appropriate” to its size and intended use and it may be that some buildings will still comply with requirement B3(3) by virtue of its intended use even though they have been extended without further compartmentation

10. If I provide sprinklers in a block of flats, can I reduce other fire protection measures?

This would be a matter for the designer and the relevant building control body to consider. However, any such proposal may result in the need to upgrade the specification of the sprinkler system and the duration of water supplies.

11. Could increasing the period of fire resistance to walls and floors in a block of flats be a reasonable alternative to providing a sprinkler system in blocks of flats over 11m high in accordance with paragraph 7.4 in Volume 1 of Approved Document B?

Sprinklers are shown to benefit life safety by reducing the frequency of significant fires and injuries or fatalities associated with fires. Research by the Building Research Establishment (BRE) into the effectiveness of sprinklers estimates a reduction in deaths and injuries at 90% and 61% respectively when sprinklers are provided in purpose built flats¹ with confidence of ±3% and ±12%. More recent analysis from Wales² considering flats estimates a reduction in deaths and injuries at 90% and 62% respectively with confidence of ±4 and ±12%.

Increasing the period of fire resistance of the compartment walls between flats beyond that specified in the Approved Document is unlikely to have any significant impact on the safety of occupants of the building and would have no discernible benefit to persons in the flat where the fire has started.

¹ Cost Benefit Analysis of Residential Sprinklers – Final Report March 2012 (BRE prepared for The Chief Fire Officers Association), page 26.

² Cost Benefit Analysis of Residential Sprinklers – Report of Cost Benefit Analysis March 2013 (BRE prepared for the Welsh Government) page 29.

12. Para 9.12 in Volume 2 of Approved Document B states “If the undivided area exceeds 40m in any direction, there is no limit to its size if all of the following conditions are met”. However, the comparable paragraph in Approved Document B 2000 edition (para 10.13) states “Where the concealed space is over an undivided area which exceeds 40m (this may be in both directions on plan) there is no limit to the size of the cavity if... “. Is the omission of the word “over” in the comparable paragraph of the current Approved Document B deliberate?

No, this is a printing error. The word “over” should be retained as for the 2000 edition of Approved Document B, and so paragraph 9.12 in Volume 2 of Approved Document B should read: “If the cavity is over an undivided area that exceeds 40m in any direction, there is no limit to its size if all of the following conditions are met”. The principle of paragraph 9.12 is that it relates to a concealed space over a single undivided room (such as an open plan office). Because the room below the space is undivided, the occupants will be able to see a fire develop and react to the changing hazard, thus cavity barriers within the space above are less important than with a cellular layout. The conditions in paragraph 9.12 are intended to reduce the risk of a fire starting/spreading in the undivided void and to prevent fire entering the void from outside the room which is not visible to its occupants.

13. Are the exposure conditions recommended in Table B3 applicable to all situations?

Table B3 in Approved Document B (ADB) sets out the type of exposure relevant for parts of buildings in common situations. This includes the structural frame, internal walls, external walls and floors. Cases may arise where parts of buildings, for example internal floors within multi-level flats, load-bearing walls internal to a flat, or parts of external load-bearing walls above openings, may be subject to fire exposures, through the course of a fire event, that would not normally be covered in single sided exposures in standard fire resistance testing. Also in some building situations, the type and form of construction may be particularly sensitive to exposure conditions and therefore will be relevant to additional exposure types, for example, due to asymmetrical cross sections or reliance on passive fire protection. Designers should consider the relevance of the exposure conditions advised in ADB to their particular design, construction type/form, and potential fire scenarios. For example, consideration should be given to the potential for load-bearing elements (including walls and floors) to become exposed on multiple faces if internal and / or external fire spread occurs. Designers should apply the most credible fire exposure conditions for their building situation, and verify that the associated evidence of performance (e.g., standard test, assessment, calculation) is appropriate for the field of application. In all cases, it is the responsibility of those undertaking the work to demonstrate compliance with the requirements of the Building Regulations.

14. My building element could be described by several of the items in Table B3. Which one should I apply?

The minimum recommended fire resistance in terms of load-bearing capacity, integrity, or insulation (R, E, or I) depends on the type of building element as outlined in Table B3, alongside the use and height of the building, with the presence of sprinklers or not, as outlined in Table B4. Both tables outline relevant minimum recommended REI performance that relates to the functional requirements of the Building Regulations for common building situations. Some elements of a building may be considered as one or more of the parts listed in Table B3, for example an external wall may also be a load-bearing wall. When considering provisions for a building part, designers should apply the most credible individual provisions for R, E, I and type of exposure. Designers should consider the function(s) of their particular building element and the relevance of the guidance, understanding the intent of the provisions, ensuring that the overall relevant functional requirements will be met.

Requirement B4 External Fire Spread

15. Note 3, in Table 10.1, of Section 10 in Approved Document B Volume 1

states that “Timber cladding at least 9mm thick is also acceptable” to be used in some external surfaces 1000mm or more from the relevant boundary. Does this allowance apply to all cases where timber is used on the outside of a building?

Designers should consider factors that can influence the fire performance of timber cladding, including form, orientation, presence of cavities, and combination with other materials (e.g. substrates) when reviewing this allowance for a particular building situation. The allowance for timber cladding at least 9mm thick was based on experiments that were conducted on timber in plank form, forming a flat and homogeneous timber surface, over a plasterboard substrate, with heating primarily from the outermost surface. In relation to buildings of any height or use, designers should consider the choice of materials (including their extent and arrangement) used for the external wall, or attachments to the wall (e.g. balconies, etc.), to ensure that the design adequately resists the spread of fire over the wall. In all cases, designers should ensure that Requirement B4 of the Building Regulations is satisfied.

16. Is my reaction to fire classification for a product relevant to all situations?

The reaction to fire classification according to BS EN 13501-1:2018 is a composite classification, derived by using outcomes from multiple test standards, including the single burning item (SBI) test according to BS EN 13823:2020. For more information on the reaction to fire classification and its derivation, guidance is provided in BS EN 13501-1. The reaction to fire performance which uses an apparatus such as the SBI test is not only a function of the material or product used, but also a function of the system tested in that configuration. This means that the same material or product can achieve different classifications when using a variety of forms, fixings, orientations and combinations with other materials, e.g., different substrates. Designers should be cautious in assuming general reaction to fire classifications to materials or products and should instead consider the field of application set out in the test report for the product and account for the form and orientation, along with the specific jointing, mounting, and fixing methods employed in the test. The field of application should be considered in relation to its end-use, and any variation in its end-use should be adequately assessed by competent professionals following the advice of paragraphs B1 to B5 in Appendix B of Approved Document B. Some materials or products may rely on additives or treatments that have a

specific maintenance requirement that is necessary to achieve their reaction to fire classification, e.g., a fire retardant coating. These limitations should be highlighted in the information package provided under Regulation 38, so the building can be maintained effectively. In all cases, designers should ensure that the relevant Requirements of the Building Regulations are satisfied.

Requirement B5 Access and Facilities for the Fire Service

17. Why is the maximum hose distance in paragraphs 13.2a in Volume 1 and 15.1 in Volume 2 of Approved Document B 45m? Our local Fire and Rescue Service appliances are fitted with hoses which are much longer than 45m.

The 45m criterion is based on the physiological demands on firefighters engaged in search and rescue and on the restrictions that may be imposed by their equipment. When considering hose length, it is important to appreciate that, in practice, hoses have a tendency to 'snake' when charged thus limiting their effective length. It is also common practice to trim the ends of hoses where they become damaged. The time and effort it takes to lay out a hose may also be an important factor.

18. Is the recommended 45m distance in paragraph 13.1 in Volume 1 of Approved Document B for access for a pumping appliance measured from the front door of a dwelling?

Paragraph 13.1 in volume 1 of Approved Document Part B states there should be vehicle access for a pump appliance to within 45m of all points within dwellinghouses. This is to take account of the actual distance that the firefighters need to carry kit and lay hoses from the vehicle to reach a potential fire.

19. If the 45m recommendation for firefighting access in paragraph 13.1 in Volume 1 Approved Document B cannot be achieved to all points within the dwellinghouse would the provision of a private fire hydrant directly outside the dwellinghouse be a suitable alternative approach?

Provision of water supplies does not, on its own, reduce the physiological impact on firefighters of travelling long distances whilst carrying heavy equipment. Water from private hydrants may still need to be pumped before it can be used for firefighting.

Where it is proposed to adopt an alternative approach to meeting requirement B5 (Access and facilities for the fire service) It would be advisable to seek the advice of the fire and rescue service who can advise on the practicalities of firefighting.

20. Why does paragraph 13.5 (a) in Volume 1 and 15.4 (a) in Volume 2 of Approved Document B say that the connection point for dry fire mains should, typically, be on the face of the building?

Approved Document B recommends that there should be vehicle access for a pump appliance to within 18m of the dry main connection point, inlets should be on the face of the building. This is to take account of the actual distance that the fire fighters need to carry kit and lay hoses from the vehicle to the building and the time it takes to charge the main.

In some situations where the 18m distance cannot easily be met, it may be acceptable to extend the connection point beyond the face of the building to reduce the distance. However, this will not, on its own, reduce the physiological impact on firefighters of travelling long

distances while carrying heavy equipment. Where it is proposed to adopt an alternative approach to meeting requirement B5 (Access and facilities for the fire service) it would be advisable to seek the advice of the fire and rescue service who can advise on the practicalities of firefighting.

The application and scope of Approved Document B

Buildings with combustible structure

21. Can I apply the guidance in Approved Document B for combustible structures (e.g. timber) in meeting the requirements of the building regulations?

Designers should discuss and agree the design intent and the necessary evidence with the building control body before starting building work.

As set out within Approved Document B, the guidance is provided for common building situations. Tall, large, or complex buildings, where the structure is able to contribute as a source of fuel during a fire, are not common building situations and present additional considerations which designers should have regard to.

The designer should consider the type of construction, alongside factors influencing the consequences of fire spread and fire induced structural failure such as height, size, and use of the building, when considering whether it is appropriate to apply the provisions in Approved Document B.

Following the guidance in Approved Document B, including the minimum fire resistance periods and the standard test methods, may not be sufficient to meet the requirements of the building regulations, particularly in cases where the consequences of fire spread, and fire induced structural failure are more significant.

Where alternative methods of complying with the building regulation requirements are adopted, it is likely to require a detailed, evidence-based, understanding of fire performance for the specific design demonstrating how each of the building regulation requirements will be addressed directly.

Note 1: Whatever design method is applied, the functional requirements of the building regulations must be met for all building work. This applies to all those responsible for building work including the building owner, agents, designers, builders and installers.

Note 2: For relevant buildings, Regulation 7(2) and 6(3) control the use of combustible materials in and on external walls.

Buildings with alternative structural failure mechanisms

22. Can I apply the guidance in Approved Document B for buildings with an unusual structural design approach (e.g. volumetric modular construction) in meeting the requirements of the building regulations?

Designers should discuss and agree the design intent and the necessary evidence with the building control body before starting building work.

As set out in Approved Document B, the guidance is provided for common building situations. Tall, large, or complex buildings, where alternative structural failure mechanisms or unusual

routes for internal fire spread might exist, are not common building situations and present additional considerations which designers should have regard to.

The designer should consider the type of construction, alongside factors influencing the consequences of fire spread and fire induced structural failure such as height, size, and use of the building, when considering whether it is appropriate to apply the provisions in Approved Document B.

Following the guidance in Approved Document B, including the minimum fire resistance periods and the standard test methods, may not be sufficient to meet the requirements of the building regulations, particularly in cases where the consequences of fire spread, and fire induced structural failure are more significant.

Where alternative methods of complying with the building regulation requirements are adopted, it is likely to require a detailed, evidence-based understanding of fire performance for the specific design demonstrating how each of the building regulation requirements will be addressed directly.

Note 1: Whatever design method is applied, the functional requirements of the building regulations must be met for all building work. This applies to all those responsible for building work including the building owner, agents, designers, builders and installers.

Named standards

23. Approved Document B references an older version of a named standard, should I use the newer version?

When an approved document refers to a named standard, the relevant version of the standard is listed at the end of the approved document. Until the approved document is amended, these references are part of the guidance approved under section 6 of the Building Act.

If work complies with the guidance referred to in the approved document, that makes it likely that the work conforms with the relevant requirements of the Building Regulations. Following other guidance would not provide that legal protection.

If an approved document refers to an older version of a standard that the issuing standards body has now revised or updated, the new version may be used as a source of guidance, provided it continues to address the relevant requirements of the Building Regulations.

For details, please see the [Manual to the Building Regulations](#).

Upwards extensions

24. I am undertaking work on an existing building which is below 11m, and adding a new floor which will exceed 11m in height, do I need to sprinker the whole building or just the new floor?

Each case must be considered on its own merits, but it is likely that where additional storeys are added to an existing building, some work on the original part of the building will be necessary.

Applicants and building control bodies are reminded of the need to consider these new provisions sprinklers in relation to extensions as required by Regulation 4(1). New accommodation, formed by building work, should meet the relevant requirements having considered the guidance in the approved document. This means ensuring that the standard of

fire protection for the occupants of the new accommodation is as would be provided for a new building under the approved document. In the majority of cases, therefore, sprinkler protection will be necessary in any newly formed accommodation that falls above the new 11m trigger height.

It may also be necessary to consider additional protection for the existing parts of the building where needed to ensure that the extension is compliant with the applicable requirements of Schedule 1. Equally, it will be necessary to satisfy regulation 4(3) by ensuring that the level of fire protection in the building as a whole is made no worse.

There may also be situations where the risk assessment for the building (provided under the Fire Safety Order) requires further work to be done. Regardless of the minimum requirements of the regulations there is, of course, merit in providing additional protection throughout the building.

Further advice can be found in the following [circular letter](#).

Fire precautions in self-catering holiday homes

25. Which volume of Approved Document B should I use when dealing with fire precautions in self catering holiday homes and short term lets?

In many cases premises which are like a family home can be designed in accordance with Volume 1 (Dwellings). However, self-catering holiday homes, and short term lets are subject to the Regulatory Reform (Fire Safety) Order 2005, and it may be necessary to take account of the duties imposed under that Order in the design of the premises.

The Department's leaflet, [Do you have paying guests?](#) provides some useful guidance on the application of the Fire Safety Order to B&Bs, guest houses, short term lets and self-catering properties. Regardless of the design guidance that is adopted it will still be necessary for Building Control Bodies to consult with Fire and Rescue Authorities on work relating to buildings where the Fire Safety Order is (or will be) applicable. This should ensure that any potential problems can be identified before building work is started self-catering properties. Regardless of the design guidance that is adopted it will still be necessary for Building Control Bodies to consult with Fire and Rescue Authorities on work relating to buildings where the Fire Safety Order is (or will be) applicable. This should ensure that any potential problems can be identified before building work is started.

Further guidance on the consultation process is given in the [Building Regulations and Fire Safety Procedural Guidance](#) published by Local Authority Building Control (LABC), with the National Fire Chiefs Council (NFCC) and the Association of Consultant Approved Inspectors (ACAI) and in conjunction with the Joint Regulators Group.

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